

SLADE

NARRATIVE REPORT

JANUARY-DECEMBER 1964

Division of Wildlife Refuges

Narrative Report Routing Slip

Refuge SLADE

Year 1964

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SLADE NATIONAL WILDLIFE REFUGE
DAWSON, NORTH DAKOTA 58428

NARRATIVE REPORT

January 1 to December 31, 1964

Permanent Personnel

Marvin Mansfield.....Refuge Manager
Theodore Schauer.....Maintenance man
James Martin.....Refuge Clerk

Part-Time Personnel

Howard Anderson - 9/14 - 10/24.....Laborer, WAE

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I. General

A. Weather Conditions.

	<u>Snowfall</u>	<u>Precipitation</u>		<u>Max.</u>	<u>Min.</u>
		<u>This Month</u>	<u>Normal</u>	<u>Temp.</u>	<u>Temp.</u>
January	<u>8.0</u>	<u>.28</u>	<u>.44</u>	<u>52</u>	<u>-27</u>
February	<u>6.5</u>	<u>.26</u>	<u>.37</u>	<u>49</u>	<u>-14</u>
March	<u>7.5</u>	<u>.31</u>	<u>.60</u>	<u>57</u>	<u>-15</u>
April	<u>10.0</u>	<u>2.79</u>	<u>1.32</u>	<u>76</u>	<u>10</u>
May	<u> </u>	<u>1.96</u>	<u>2.26</u>	<u>91</u>	<u>30</u>
June	<u> </u>	<u>6.51</u>	<u>3.88</u>	<u>93</u>	<u>35</u>
July	<u> </u>	<u>2.62</u>	<u>2.51</u>	<u>98</u>	<u>48</u>
August	<u> </u>	<u>1.81</u>	<u>2.04</u>	<u>99</u>	<u>35</u>
September	<u> </u>	<u>.45</u>	<u>1.71</u>	<u>88</u>	<u>45</u>
October	<u>3.0</u>	<u>.17</u>	<u>1.20</u>	<u>82</u>	<u>19</u>
November	<u>6.0</u>	<u>.40</u>	<u>.45</u>	<u>65</u>	<u>-22</u>
December	<u>10.5</u>	<u>.50</u>	<u>.32</u>	<u>33</u>	<u>-27</u>
Total:	<u>51.5</u>	<u>18.06</u>	<u>17.10</u>	<u>Extremes 99</u>	<u>-27</u>

The information contained in the above table was obtained from the records of the official U.S. Weather Bureau Station located eight miles west of the refuge in Steele, North Dakota.

The first three months of the year recorded below normal precipitation and above normal temperatures. February was especially mild with only five days recording zero or below, and 21 days 30 or above.

April was the first month of above normal moisture with 1.19" of rain falling on the 27th. It was either raining or threatening rain from the 21st through the 27th.

May was quite warm with a 91 on the 21st. The last frost was recorded on May 31st when it was 30 degrees. Except for 0.17" on the 15th, there was no rain after the 9th, and the dry weather reduced water levels and prevented some late seeded grain from germinating.

Much needed moisture arrived in June. From the 8th through the 11th 2.74" fell, and 3.37" came down between the 16th and 22nd.

Fifty MPH winds accompanied by rain and light hail struck on the evening of July 4th. No damage resulted, but moderate to heavy damage (especially to crops) was caused by a severe local hail and rainstorm on July 19th. Three barn windows were broken and two awnings on refuge buildings were cracked. The Lutheran Church in Dawson had 21 windows broken. This storm dumped over 2" of moisture in less than one hour.

August will long be remembered for the frost that hit on the 13th when it was 32 at the refuge, while 35 was recorded at the Weather Station in Steele.

A very hard snow was recorded on September 26th which accumulated to one inch. Actually much more fell but it melted rapidly. This was the last moisture received until October 28th when 0.17" fell in the form of snow.

The first cold wave hit on November 19th when the temperature dipped to 2 degrees below zero. Two inches of snow fell on that date which marked the beginning of a blanket of snow which measured 8" by the end of the year.

The last month of the year was the fourth coldest December ever recorded. There were 22 days of below zero weather with an unbroken string from the 13th through the 27th. A severe blizzard struck on the 15th (8:00 P.M.) and lasted through the 16th. This storm destroyed many pheasants and some deer, antelope and livestock in the southwestern part of the state. It was not that severe in this vicinity, although winds reached 40 MPH on the 16th when the high was 9 below.

B. Habitat Conditions.

1. Water

Except for Headquarters Lakes the water situation improved slightly over 1963, however nearly all of the refuge potholes were dry the entire year. Those that had water held only enough to say they were wet, and this quickly disappeared with little benefit to wildlife. The one exception to this was Recreation Slough which held six inches to a foot of water until fall.

Water levels in Northwest Slough and Southeast Slough were partly maintained again this year by springs. A small amount of water was still flowing into these units in early November. None of this water left the sloughs however, as outflow ceased about July 15th in Northwest and about June 30th in Southeast.

Some water from Southeast Slough managed to find its way to Lake Isabel. The flow was limited and lasted only from late April to late May.

The following table shows comparative levels for the major water areas at freeze-up. The figures (in feet) are for comparison from year to year only and do not represent lake depth or elevations.

TABLE NUMBER 1

Comparative Water Levels At Freeze-Up

Water Area	1959	1960	1961	1962	1963	1964
Harker Lake	2.6	2.8	1.6	2.6	2.4	2.7
South Marsh	0.1	0.0	0.0	0.0	-0.1	0.2
Hdqtrs. Lakes	2.9	2.0	0.9	1.0	Dry	Dry
NW Slough	2.2	2.7	2.4	3.1	2.4	2.9

2. Food and Cover.

Aquatic food production was fair to good in Northwest Slough, Southeast Slough, and South Marsh. It was fair in Harker Lake and poor in Upper Harker Lake.

Excess grain was spread on the ice in March in Southeast (75 bushels) and Upper Harker (150 bushels). Mostly divers utilized the grain in Southeast Slough, because of deeper water, while the opposite was true in Upper Harker.

Cattail and phragmites stands are quite dense in Southeast Slough and South Marsh, and provide excellent escape cover for ducklings and winter cover for pheasants and deer. The hardstem bulrush in Northwest Slough is quite rank, while the sparse stands in Harker and Upper Harker Lakes continue to spread slowly.

The July 19th hail storm broke off the barley heads in A-4. The western part of this unit has a history of heavy duck use, but they (mostly mallards, a few pintails) would not go in the barley until two truck loads (360 bushels) of barley were dumped in the field on August 26th. Numbers soon built up to 2,000 and reached a peak of

7,000 by the end of September. Another 150 bushels was dumped in the field on September 21 and was quickly utilized. This dumped grain was all gone by early October when they started feeding off the refuge. They never did utilize more than $\frac{1}{4}$ of the broken barley heads.

Corn strips were planted in various places on the refuge, which were to be left standing, primarily to provide a winter food supply for upland game birds. The hail storm destroyed about $\frac{1}{3}$ of the corn, and the August frost ruined about $\frac{1}{2}$ of the remainder. The few small ears that got hard were soon taken by deer, and by the end of October no corn remained. It is interesting to note that the deer started feeding in the corn in September.

Because of the lack of corn, feeding at four sites (two elevated and two bare ground) was started in late November. These feeding stations are being utilized by pheasants, sharptailed grouse, gray partridge, deer, and jack rabbits.

II WILDLIFE

A. Migratory Birds.

1. Geese and Swans.

One lone Canada goose was observed on April 10th in Upper Harker Lake. The peak was reached on April 13th when 50 were observed in Harker Lake, but these soon headed north. No geese have ever been known to nest on the refuge.

A heavy migration of Canada geese was observed passing over the refuge on April 1st. A small flock of 10 white-fronted geese passed over on April 10th.

The fall migration of geese in this area was much reduced over 1963. On November 4th there were 15 Canada geese on the refuge. The refuge normally has few geese, but the Kunkel and Sibley Lake area only had about 200, while they had 1,000 - 1,500 in the fall of 1963.

The exact opposite was true of whistling swans. Oldtimers said they ~~had~~ never seen as many swans in this area. The refuge peak of 170 was reached the first week of November. This compares with a previous high of 35 in 1956. All of the nearby large water bodies had many swans. Observations on some of these include the following:

10/6	Buffalo Lake	83
10/9	Lake Etta	400
10/17	Lake Henry	650
10/21	Alkaline Lake	1,000
11/1	Buffalo Lake	200
11/1	Sibley Lake	850

2. Ducks.

The first migrants (20 mallards) arrived on March 13th. No other ducks were observed until four pintails showed up on April 1st. By April 11th all of the common ducks were observed except blue-winged teal, American widgeon, and ruddy duck.

The peak count of 3,800 was reached on April 17th and included 1,425 redheads and 530 canvasbacks (See Table Number 2). This was the highest spring count ever recorded for the refuge.

TABLE NUMBER 2

PEAK SPRING POPULATION OF COMMON DUCKS

	<u>1964</u>	<u>1963</u>	<u>1962</u>	<u>1961</u>	<u>1960</u>	<u>1959</u>
Mallard	190	180	70	200	180	100
Gadwall	170	110	100	180	60	60
American widgeon	100	90	40	400	80	10
Pintail	70	140	40	200	200	60
Blue-winged teal	70	120	120	120	60	160
Shoveler	80	60	60	180	70	50
Total Dabblers	<u>680</u>	<u>700</u>	<u>430</u>	<u>1,280</u>	<u>650</u>	<u>440</u>
Redhead	1,420	80	40	400	10	80
Canvasback	530	40	80	220	40	10
Scaup	1,010	1,100	300	1,400	800	500
Ruddy	80	10	20	40	60	10
Total Divers	<u>3,040</u>	<u>1,230</u>	<u>440</u>	<u>2,060</u>	<u>910</u>	<u>600</u>
Total Ducks	3,720	1,930	870	3,340	1,560	1,040

A breeding pair count was made on May 20th, followed by brood counts on June 14th and 20th, and August 3rd and 21st. It was hoped that production would increase significantly as a result of the large number of ducks observed in April, but the increase was only slight (259 in 1964 to 229 in 1963). Table Number 3 illustrates the pairs and broods observed, and Table Number 4 the estimated production for the past six years.

TABLE NUMBER 3

DUCK BREEDING POPULATION AND PRODUCTIONOBSERVED AND ESTIMATED

	Observed		Estimated Pairs	Observed Broods	Estimated Broods
	Pairs	Lone Males			
Mallard	10	15	20	4	10
Gadwall	8	3	12	5	7
A. widgeon	2	3	4	-	1
Pintail	0	3	11	2	6
B.W. Teal	7	19	20	4	10
Shoveler	4	7	7	-	3
Total Dabblers	31	50	74	15	37
Redhead	18	13	24	2	3
Canvasback	5	12	10	3	4
Scaup	1	5	3	1	1
Ruddy	10	6	14	7	10
Total Divers	34	36	51	13	18
Total Ducks	65	86	125	28	55

TABLE NUMBER 4

ESTIMATED PRODUCTION

	<u>1964</u>	<u>1963</u>	<u>1962</u>	<u>1961</u>	<u>1960</u>	<u>1959</u>
Mallard	50	38	46	26	52	104
Gadwall	30	60	119	50	103	14
A. widgeon	5	11	11	-	-	-
Pintail	30	19	19	19	44	6
B.W. Teal	55	68	122	34	68	75
Shoveler	15	13	19	-	-	-
Redhead	10	13	19	6	-	-
Canvasback	20	-	-	-	-	-
Scaup	4	-	-	-	-	-
Ruddy	40	7	8	-	-	-
Totals	259	229	363	135	286	205

Average brood size was low (see Table Number 5), probably as a result of June rain, the July hail storm, and predation.

TABLE NUMBER 5

AVERAGE BROOD SIZE

	<u>Number Broods Observed</u>	<u>Total Young</u>	<u>Average Brood Size</u>
Mallard	4	21	5.25
Gadwall	5	20	4.00
Pintail	2	10	5.00
Blue-wing teal	4	22	5.50
Redhead	2	5	2.50
Canvasback	3	14	4.67
Scaup	1	4	4.00
Ruddy	<u>7</u>	<u>25</u>	<u>3.57</u>
Total	28	121	4.32

The peak fall population of 9,000 ducks was up considerably from last years all-time low of 1,375. Mallards and scaup again were the most common ducks (see graph) with the mallard peak reaching 8,480 the week of October 25th.

It can be seen in NR-1 that there were three distinct mallard peaks. Apparently these were caused by a movement on and off the refuge, as the migration appeared quite leisurely. The peak the week of October 11th was caused by the opening of waterfowl season on October 9th.

The normal peak of about 40 buffleheads was surpassed when a new record high of 110 was recorded the week of October 11th. The previous high (80) was in 1960. This was in contrast to a very low population of redheads.

3. Coots.

The first coot was observed on April 12th. The peak of 150 was recorded the week of May 3rd, and was followed by a rapid decline to the breeding population of 30 birds. A Total of eight broods were observed, and total production is estimated at 40.

The fall peak of 270 compares with 80 in 1963, and was reached the first week in September. By the opening of waterfowl season there were only a few coots left.

PEAK FALL POPULATIONS

MALLARDS AND SCAUP

Mallard

Scaup

10000

9000

8000

7000

6000

5000

4000

3000

2000

1000

0

1957

1958

1959

1960

1961

1962

1963

1964

4. Water and Marsh Birds.

A great blue heron was observed on April 2nd to mark the first arrival in this group. From two to three were here until fall. The last one was seen on October 16th.

Very few pelicans visited the refuge this year, but 90 cormorants were counted sitting on the point in Harker Lake. Neither bird nested on the refuge.

Eared grebes were very common as indicated by the observation of five broods (16 young) on August 3rd. It is estimated that 40 eared grebes were produced.

Western and pied-billed grebes occurred in about equal number with several broods of each kind present. Only five red-necked grebes were seen, while no horned grebes were known to be present.

5. Shorebirds, Gulls, and Terns.

Sandhill cranes were observed migrating over the refuge in large numbers (2,000 plus or minus) on April 16th. No others were seen until two (thought to be fall migrants)* were observed on August 11th. Numbers gradually increased to an estimated peak of 16,000 on October 5th (see Table Number 6). This compares with an estimate of 15,000 in 1963.

The early frost cut corn yield enough so that damage by cranes was light. One depredation complaint was received on September 23rd from Forrest Eberl.

The last cranes were observed on November 9th when a large migration took place.

No whooping cranes were actually seen this year. Several reports of possible sightings were received in April and May, but none could be verified.

Marbled godwit, willet, upland plover, and American avocet are refuge nesters which were observed in fair numbers.

Gulls were down again this year with only 160 Franklin's, and a few ring-billed and herring gulls being sighted.

* A local rancher (Charles Bowerman) stated that a small flock of 50 spent the entire summer near Kunkel Lake. No nesting was known to have occurred.

TABLE NUMBER 6
SANDHILL CRANE POPULATIONS

FALL, 1964

<u>Date</u>	<u>Cranes Observed</u>	<u>Cranes Estimated</u>	<u>Observer</u>
8/24	875	1,000	Mansfield
8/31	725	1,200	Mansfield
9/12	3,125	3,500	Martin
9/16	4,135	5,000	Martin
9/23	2,250*	8,000	Martin
10/5	14,000	16,000	Mansfield
11/1	7,000	10,000	Mansfield

* Many missed as they were feeding and scattered all over.

6. Mourning Doves.

Doves were first sighted on April 10th. They soon became numerous, and production was good, with the heaviest nesting taking place in the headquarters tree grove. The last birds were seen on September 15th.

B. Upland Game Birds.

1. Ring-necked Pheasant.

Pheasant production was only fair because of heavy rains in June and the hailstorm in July. Their numbers were further reduced by a hard December blizzard and prolonged subzero weather. The estimate of 100 compares with 200 a year ago.

2. Sharp-tailed Grouse.

These birds are holding their own with an estimate of 40, the same number as last year. They are able to handle blizzard conditions by completely burying themselves under the snow. On two occasions this winter they were flushed from these warm temporary homes.

A dancing ground (see Map Number 1) was found on the refuge just south of A-1 in a strip of brome grass. This is the first record of such a ground on Slade Refuge. Several counts were made with the maximum of 12 birds (9 male, 3 female) recorded on May 8th.

The brome grass strip (where the dancing ground was located) was

MAP NUMBER 1 SLADE NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

KIDDER COUNTY, NORTH DAKOTA

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
R72W R71W

99°44'

SHARP-TAILED GROUSE DANCING GROUNDS 1964 - 0

46°52'

46°52'

46°50'

46°50'

T
139
N
T
138
N

T
139
N
T
138
N

99°44'

R72W R71W

COMPILED IN THE BRANCH OF ENGINEERING

FIFTH PRINCIPAL MERIDIAN

MINNEAPOLIS, MINNESOTA

MARCH, 1980

Scale 0 20 40 60 CHAINS
1/4 0 1/4 1/2 3/4 MILES

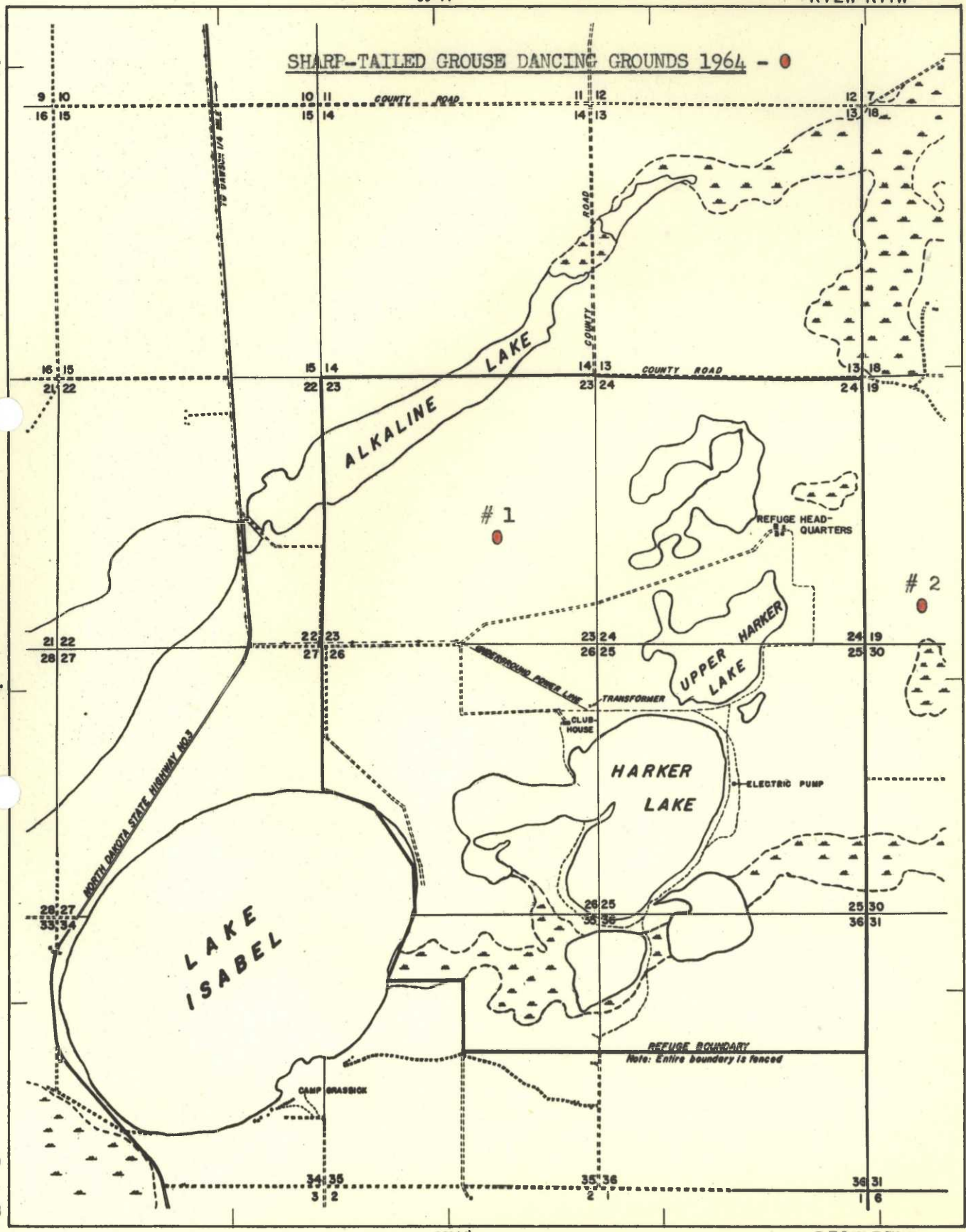


TOWNSHIP
DIAGRAM



MEAN
DECLINATION
1980

3R N.D. 394 408



burned on April 10th, to see what effect burning had on brome. The birds apparently started using the area shortly after burning. No use is made of the strip; so the area was mowed in early September to see if they would use it again in the fall, and to be sure it was short enough for them next spring. On September 25th six grouse were on the ground.

Another ground was located on private land near the east boundary. This ground had three males and one female on April 29th.

3. Gray Partridge.

The population estimate of 30 is down from the 40 estimated a year ago. They are still commonly seen on and adjacent to the refuge. Fourteen were observed on the entrance road in late December.

4. Pinnated Grouse.

None were seen on the refuge this year, but three were spotted in September on the north side of Sibley Lake. This identification was positive.

C. Big Game Animals.

White-tailed deer (the only big game animal on the refuge) are definitely on the increase. During September as many as 17 were seen at one time feeding on barley in A-4. A group of seven was observed on the refuge on December 28th. They spend most of their time in the phragmites near Lake Isabel and Southeast Slough.

D. Fur Animals, Predators, Rodents, and Other Mammals.

1. Fur Animals.

No muskrats or any of their signs were seen this year. With an absence of dikes, and some heavy stands of emergents, a few "rats" would be welcome.

On May 17th a large male mink was caught in a live trap. He was released after some pictures were taken. On that same date a small female: walked up to the writer while he was hiding in a picture blind at Southeast Slough. The population is low and is estimated at eight.

Three long-tailed weasel (mother with two large young) were seen on the west side of Harker Lake on July 1st. This population is also low and is estimated at 10.

2. Predators.

Skunks, raccoon and red fox are common, with their numbers estimated at 20, 15, and 10 respectively. It is not unusual to see two skunks

or two foxes in a drive around the refuge. Raccoons are rarely seen, but they made their presence known in the sweet corn patch. Only one badger was seen, and five are estimated to be present.

During the year, predator control work eliminated six skunks, three red fox, and two raccoons.

3. Rodents and Other Mammals.

Jack rabbits are still increasing as groups of three to six are commonly seen at night, while driving between the entrance and refuge headquarters.

Fair numbers of cottontails are present at the recreation area. One was seen several times in December at headquarters.

Thirteen-lined ground squirrels, mice (spp.), Dakota pocket gophers, and Franklin's ground squirrels are common. Two shrews (believed to be masked shrews) were observed, one in June and the other in December. No porcupines or beaver were sighted.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies.

Marsh hawks were common from the first sighting on March 2nd to the last sighting on October 16th. Red-tailed hawks, rough-legged hawks, and sparrow hawks were seen occasionally. One sharp-shinned hawk and one prairie falcon ^{were} ~~was~~ observed in April.

Great horned owls were present all year. One snowy owl was seen on November 11th.

A golden eagle was present in January and another was sighted in December. One bald eagle was seen on September 21st. Several eagles were observed migrating through this general area from November 2nd to the 6th.

The first crow was noted on February 23rd and the last on September 21st. No crows spent the summer on the refuge. Magpies (1-3) were present in the late winter, and again in the fall and early winter.

F. Other Birds.

The hard winter has reduced the bird population or caused them to move. The numbers of prairie horned larks, snow buntings, and English sparrows are much reduced compared to 1963. As many as 10 redpolls were seen around headquarters from January to March, but none returned in December.

A northern shrike was seen in January and early March. Robins were first observed on March 20th, with the last sighting on November 8th. A black-billed cuckoo nested in the headquarters tree grove,

as did a catbird and several eastern and western kingbirds, as well as several common grackles.

G. Fish.

Fathead minnows were attempting to go through the culverts between Harker Lake and Southeast Slough during the spring.

No game fish are known to be present on the refuge; however, Lake Isabel contains some nice size perch and northern pike.

H. Reptiles.

Garter snakes, tiger salamanders, and painted turtles are commonly seen crossing the refuge roads. Many leopard frogs are found at the dugouts. One smooth green snake was found near headquarters.

I. Disease.

None noted.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

In June, a new 8' x 12' entryway was built on the west side of the residence to provide some much needed storage space. The ceiling, walls, and floor of the main part of the basement were painted in October.

The entire inside portion of the office was painted and venetian blinds were installed in September. In June a parking lot was constructed in front of the office.

A stockwater pond was constructed in G-3 in May, and in G-4 in September.

The road was raised and new culverts were installed between Harker Lake and Southeast Slough (two), and between South Marsh and Southeast Slough (one). The culverts were raised over two feet which will result in more water in Southeast Slough. They are 18" culverts with flap gates, which will give us some control over water elevations in South Marsh and Harker Lake.

A new sidewalk, three awnings, and a picket fence were constructed on the south side of the residence.

A new cesspool for the residence was constructed in June. It is built from cement blocks laid in a circle, but not cemented together. It is 10 blocks high and 6' in diameter, with a top made from railroad ties. When measured on September 29th it contained 4" of water.

The cesspool was necessary because the drain field became plugged, which prevented the septic tank from spilling. The septic tank had to be opened up in September as it stopped operating again. The trouble this time was the cast iron pipe which goes from the tank to the cesspool. It was plugged solid for about 10" and had to be reamed out. Apparently it became plugged because of the poor flow resulting from the plugged drain field. The septic tank was pumped out while it was open.

Bluegrass sod (850 sq. ft.) was laid around the new parking lot and the residence addition.

One half mile of new fence was constructed on the west boundary from the entrance road to Lake Isabel. A large two piece gate was placed in this fence at the entrance to the recreation area.

A new set of concrete steps was built at the recreation area to prevent erosion caused by people going up and down the hillside.

B. Plantings.

1. Aquatics and Marsh Plants.

None.

2. Trees and Shrubs.

Colorado blue spruce were planted in April to fill in openings in the tree groves at headquarters (400) and Northwest Slough (600).

3. Upland Herbaceous Plants.

None.

4. Cultivated Crops.

The wind and hail storm in July caused an estimated 40 - 70 per cent reduction in grain yields. In addition, the August frost cut corn yields further. It is estimated the average yields per acre were: oats 20, barley 16, corn and wheat 4.

The alfalfa, which is used in rotation, can not be cut for hay. One crop strip in A-3 was seeded to sweet clover and will be left standing.

Because of nesting ducks, several of the strips in A-4 were reduced in size where they came close to water. These areas were seeded to sweet clover or alfalfa.

Several narrow strips, in large brome grass fields, were plowed and disced in September and October to prepare them for corn plantings in 1965.

C. Collections and Receipts.

1. Seed or Other Propagules.

Sully's Hill Game Preserve supplied us with 400 lbs. of slender wheat grass seed for use on Waterfowl Production Areas.

2. Specimens.

None.

D. Control of Vegetation.

Eight small patches of leafy spurge were sprayed with Trysben 200. Three of these were new in 1964 (see Map Number 3). The patches were all sprayed twice to control the regrowth.

Sow thistle and Canada thistle were not sprayed because most of the areas are now included in grazing units.

E. Planned Burning.

The phragmites in and around Recreation Slough were burned on April 3rd. A bromegrass strip was burned on April 10th, and the shoreline on the south side of Northwest Slough was burned on April 20th. The burning of this slough appeared to be of no direct benefit and will therefore be discontinued.

With light grazing, no haying, and no summer fallowing, the entire refuge (except open water) is a solid stand of vegetation of varying heights. Burning is desirable to create some openings, which make it easier to census wildlife and control predators.

F. Fires.

The danger of fire was very high in October, but luckily no fires were out of control in this area.

IV RESOURCE MANAGEMENT

A. Grazing.

The grazing season extended from May 15th to October 15th on all units except G-2, where the dates were from June 1st to October 31st. The rate was \$1.84 per A.U.M. compared with \$2.00 in 1963. A further drop in beef prices in the fall of 1964 has resulted in a rate of \$1.52 for 1965.

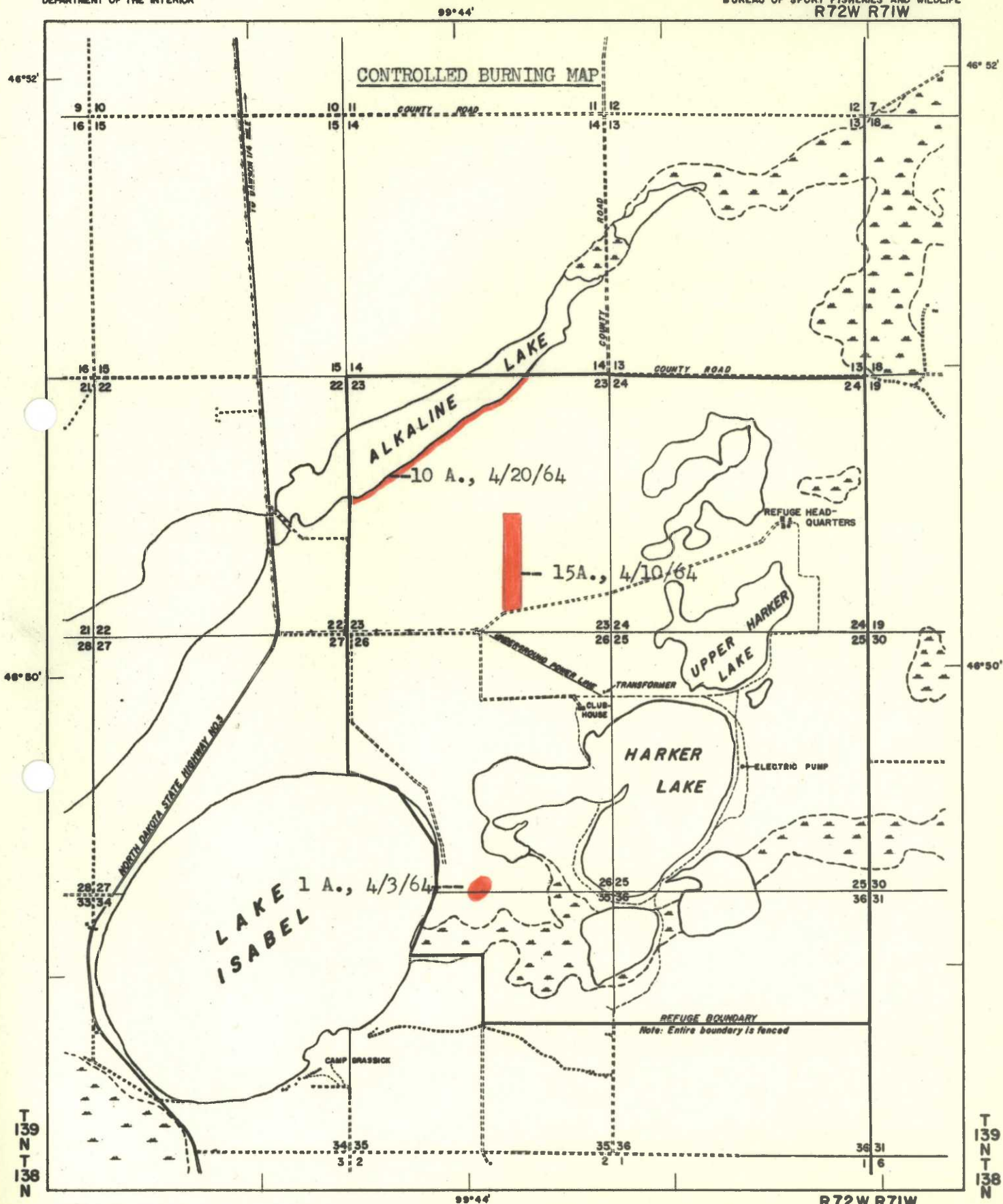
Grazing conditions were good, and the units were in excellent condition

MAP NUMBER 2 SLADE NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

KIDDER COUNTY, NORTH DAKOTA

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
R72W R71W



COMPILED IN THE BRANCH OF ENGINEERING

MINNEAPOLIS, MINNESOTA

MARCH, 1960

FIFTH PRINCIPAL MERIDIAN

Scale 0 20 40 60 CHAINS
0 1/4 1/2 3/4 MILES



TOWNSHIP
DIAGRAM



MEAN
DECLINATION
1960

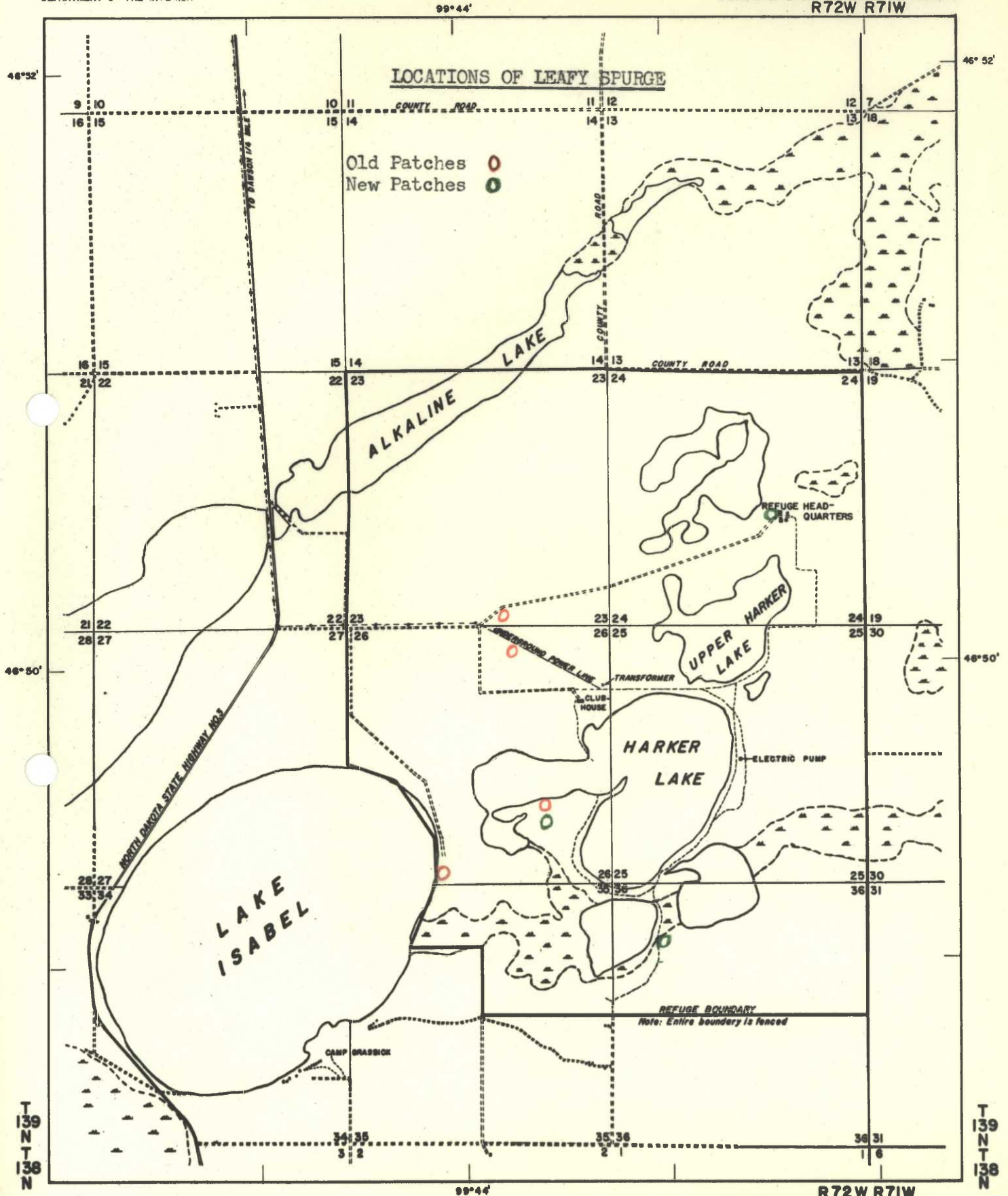
3R N.D. 394 406

MAP NUMBER 3 SLADE NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

KIDDER COUNTY, NORTH DAKOTA

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
R72W R71W



COMPILED IN THE BRANCH OF ENGINEERING

FIFTH PRINCIPAL MERIDIAN

MINNEAPOLIS, MINNESOTA

MARCH, 1980

Scale 0 20 40 60 CHAINS
1/4 0 1/4 1/2 3/4 MILES



TOWNSHIP
DIAGRAM

MEAN
DECLINATION
1980

3R N.D. 394 406

at the close of the season. In October the new dugout in G-3 was about three fourths full, while the one in G-4 was about a foot from being full.

During a dry year, units G-5b (Harold Kleppe) and G-5c (G. Lang) will not be able to support the present rate of 30 cows and calves for five months of grazing. Starting in 1965 they will be reduced to 26 cows and calves for five months, or 30 cows and calves for four months.

B. Haying.

None permitted.

C. Fur Harvest.

Because of the low mink population and the lack of interest in trapping predator species, no trapping was permitted.

D. Timber Removal.

None.

E. Commercial Fishing.

None.

F. Other Uses.

None.

V FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. Bromegrass Control Study.*

1. Mechanical Control Results.

Little change in the strips was noted when they were checked on July 21st. Strip 2 is Russian wildrye instead of Mandan wildrye as reported in the last NR. This strip (along with those containing crested wheatgrass) is highly resistant to invasion by bromegrass.

2. Chemical Control Results.

Enroachment of bromegrass into strip 10 and block C was nearly complete (80%) when checked on July 21st. Strips A and B contained about 90% bromegrass on that date.

* See map in Sept. - Dec., 1963 NR.

VI PUBLIC RELATIONS

A. Recreational Use.

The cool, damp week-ends cut the estimated use-days at the Lake Isabel Recreation Area to 25,000, the lowest in several years. As in the past, the area was open from May 15th to September 21st.

Facilities have deteriorated to the point where complaints (well justified) are being received. Mr. Ed Trecker (Recreation Specialist from R.O.) visited the area in July and said it had great potential, but that much improvement was needed.

The Dawson Town and Country Club still has the free use permit for the area, but the organization is nearly defunct. There are seldom more than eight people present at the meetings. They will have to make some real progress in 1965 in fixing up the area or the permit will be taken away.

B. Refuge Visitors.

Name	Affiliation	Purpose of Call	Date
B. Johnson	Appraiser, Jmstn. AAO	Land acquisition	1/8
C. Odin	Supr., Jmstn. AAO	Wetlands discussion	1/22
H. Poeker	Biologist, Jmstn. AAO	" "	"
S. Bale	District Ext. Supr., 4-H	4-H Camp	1/24
D. Palmer	Asst. State 4-H Club Leader	" "	"
D. Johnson	Engineer, Ext. Service	" "	"
P. Park	Kidder Co. Ext. Agent	" "	"
J. Carlsen	Supr., Minot AAO	Courtesy	2/26
J. Schiermeister	Farmer, Linton	"	3/6
C. Nunn	Dawson	Fencing contract	3/11
S. Pendill	"	" "	"
D. Wise	"	" "	"
M. Plenart	Biologist, Jmstn. AAO	Courtesy	3/19
R. Fries	Wetland Mgr., Turtle Lake	Pick up grass seed	3/31
M. Hammond	Biologist, Lo So NWR	Habitat management	4/7
E. Collins	Mgr., Pocasse NWR	Pick up grass seed	4/15
H. Jensen	USGMA, Jmstn.	Dove banding	5/6
F. Engh	N.D. Highway Patrol	Courtesy	5/7
W. DeVore	Former Co. Commissioner	"	"
F. Krege	Reg. transport driver	Deliver road grader	5/7
H. Shipley	Farmer, Steele	Grazing	5/19
A. Radniecki	Radniecki Construction	Construct dugout	5/19
M. Kohlase	Engineer, Jmstn. AAO	Kirschenmann WPA	5/25
H. Boeker	Biologist, Jmstn. AAO	Courtesy	6/9
J. Thompson	Clerk, Agassiz NWR	"	"
A. Michelson	Burnstad Trail Riders	Use of recreation area	6/14

Name	Affiliation	Purpose of Call	Date
E. Smith	USFWS, R.O.	Inspection	6/16
F. Carpenter	" "	"	"
C. Odin	Supr., Jmstn. AAO	Courtesy	6/18
E. Nafus	SCS, Steele	"	6/23
C. Clark	Bird watcher, Ill.	Birding	6/24
C. Quinneld	SCS Range Cons., Dickinson	Range study	6/25
H. Jensen	USGMA, Jmstn.	Courtesy	6/29
C. Schuler	MM, Tewaukon NWR	"	7/1
P. Park	Kidder Co. Agent	4-H nature tour	7/7
L. Sisco	Retired farmer, Steele	Sisco WPA	7/13
J. Fisher	Farmer, Tappen	Use of recreation area	7/15
K. Ystesund	Appraiser, Jmstn. AAO	Sisco WPA	7/15
E. Trecker	USFWS, R.O.	Recreation area	7/16
C. Quinneld	SCS Range Cons., Dickinson	Range study	7/21
J. Baumann	Mgr., Sully's Hill Game Preserve	Pick up grass seed	8/27
H. Graves	Horticulturist, Fargo	Landscaping	9/1
H. Jensen	USGMA, Jmstn.	Discuss dove season	9/5
H. Duncan	USGMA, Oshkosh, Wisc.	" " "	"
J. Stoudt	Biologist, NPWRC	Sandhill cranes	9/8
D. Williams	SCS Range Cons., Bismarck	Range study	9/9
L. Van Berkomp	SCS Area Cons., Steele	" "	"
L. Van Berkomp	" " " "	Tree study	9/28
O. Swenson	Mgr., Long Lake NWR	Quarters survey	10/6
C. Heupel	Bismarck	Swan violation	10/12
C. Stephen	USFWS, R.O.	Water rights	10/19
F. Carpenter	" "	Inspect WPA's	10/21
F. Gillette	" C.O.	" "	"
L. Harrison	" R.O.	Quarters survey	10/23
C. Stephen	" "	Water rights	10/23
S. Major	Medina Sportsman Club	Chase Lake NWR	11/2
K. Ystesund	Appraiser, Jmstn. AAO	Courtesy	11/20
H. Olson	P&RC, Dawson	Skin coyotes	12/28
J. DeKrey	Farmer, Tappen	Grazing Bechhold WPA	12/20
K. Bodell	Appraiser, Jmstn. AAO	Easements, WPA's	Several
M. Syverson	SCS Tech., Steele	Dugouts & general SCS work	"

C. Refuge Participation.

Date	Organization	Location	Attendance	Activity
1/20	FFA	Tappen, N.D.	20	Slide-talk
3/16	School	Pettibone, N.D.	147	" "
3/16	PTA	Dawson, N.D.	70	" "
3/17	School	Medina, N.D.	325	" "
3/18	School	Tappen, N.D.	294	" "

Date	Organization	Location	Attendance	Activity
3/18	School	Steele, N.D.	400	Slide-talk
3/18	"	Dawson, N.D.	65	" "
3/19	"	Driscoll, N.D.	150	" "
3/19	"	Robinson, N.D.	145	" "
4/10	4-H Club	Tappen, N.D.	14	" "
4/29	Tappen Biology Class	Slade Refuge	20	Refuge tour
5/14	Cub Scouts, Steele	" "	15	" "
6/18	Sheridan Co. 4-Her's	" "	20	Slide-talk
6/23	Logan Co. 4-Her's	" "	40	Nature hike
6/23	McIntosh Co. 4-Her's	" "	40	" "
6/24	Burleigh Co. 4-Her's	" "	70	Slide-talk
7/6	Morton Co. 4-Her's	" "	66	Nature hike
7/8	" " "	" "	66	Slide-talk
7/12	Medina Sportsman Club	Crystal Springs	100	Speech
7/13	Kidder Co. 4-Her's	Slade Refuge	66	Slide-talk
11/2	Masonic Lodge	Mandan, N.D.	19	" "
11/10	Isaak Walton League	Bismarck, N.D.	18	" "

Above activities handled by Manager Mansfield.

D. Hunting.

September 15th marked the opening of hunting for sharp-tailed grouse, gray partridge, and mourning doves. Success was fair to good for grouse and "Huns", but poor for doves as most of them had migrated. Hunting pressure was light to moderate.

The goose season opened October 1st, with no more than three or four flocks in the general area. Hunting pressure was moderate but higher than 1963. Success was much lower because of the poor flight through this area.

The duck season opened October 9th with a fair population of ducks. Hunting pressure was moderate but up considerably from 1963. Poor duck hunting weather prevailed much of the time, but success was still good. There was a fair kill of redheads, but a light kill of "cans".

Seven hunters were checked opening day with seven mallards and one scaup. One mallard had been crippled and lost. Mallards make up the bulk of the kill in this area.

The pheasant season opened October 10th with a definite increase in numbers. The hunting pressure and kill were up over 1963, but still only moderate.

The only hunting permitted on the refuge is for deer. The season opened at noon on November 6th and closed at sunset on November 15th. Hunting pressure was up slightly but still very light. Only four deer were taken; two yearling bucks, one yearling doe, and one female fawn.

The deer were in excellent condition as evidenced by the bucks. One was a four pointer and the other a three pointer (western count).

E. Violations.

On October 11th at Alkaline Lake, Refuge Clerk Martin apprehended a Bismarck hunter (Carl Heupel) for killing a whistling swan. The case was heard in Steele and Mr. Heupel paid a \$25.00 fine and no costs.

On October 24th the manager apprehended Mr. Robert Crawford of Bismarck, near the north boundary of the refuge, for late shooting at ducks. He posted a bond of \$15.00 in the Steele court and forfeited it when he failed to appear at the hearing.

F. Safety.

Monthly safety meetings were held except in May, July and September. The movies, "Be Current Wise", "Safest Township Anywhere", and "What's Your Driver's I.Q.?" were shown during the year.

The following articles from Safety Bulletins and the "Family Safety" magazine were read and discussed:

"Gasoline it's Dynamite"	"Carbon Monoxide Poisoning"
"The ABC's of Water Safety"	"Tetanus Shots"
"Watch out for Lightning"	"Christmas Hazards"

The October meeting was devoted to the proper use of fire extinguishers. Gasoline and wood fires were extinguished with CO₂, Soda and acid, dry chemical, and back pump extinguishers.

Safety shields were installed on the shop grinder, a "No Smoking" sign was placed on the gasoline pump, and the junk was cleaned out of the storage shed.

There has never been a lost time accident at this refuge, and the record now stands at 8,631.

VII OTHER ITEMS

A. Items of Interest.

Maintenanceman Schauer and Refuge Clerk Martin were both placed on Career-Conditional status during the year. These men have done good work and are expected to continue to show improvement in 1965.

On March 27th a fourth boy (Darin) was added to the Mansfield family. There appears to be something in the drinking water that is causing

this, and it is easy to see why the former manager preferred beer to water.

The 4-H Camp Association worked very hard one day in May to prepare the lodge for the camping season. They put down a new plywood floor in the upstairs rooms of the small quarters, installed an outside fire escape from the upstairs of the main lodge, painted the dining hall, and made many minor repairs. They apparently have given up the idea of building a new lodge because of a lack of funds.

On December 11th at about 11:30 P.M. Mr. LuVerne Albrecht hit the new gate which had been installed at the entrance to the Recreation Area. He had a young lady with him, and must have been in a big hurry as he sheared off both railroad ties that supported the gate.

Luckily they were not injured, but the car and gate suffered moderate damage. He might have gotten away, but the car headlights were broken so he notified the sheriff. The sheriff arrested him for using undue care. He was taken to Steele where he paid a \$10.00 fine and costs of \$5.00. The gate will be repaired by his insurance company.

On August 11th a young (about 18) female counselor from Camp Grassick (handicapped children's camp on Lake Isabel) had the day off and decided to soak up some sunshine. She walked down the beach from the camp until she was on the refuge beach, where she proceeded to remove her clothes. She was all alone until the lady who runs the concession stand came to work (about noon) and spotted her. She got dressed but would not talk to the lady, or to Clerk Martin (Manager was gone for the day) because she was afraid of involving Camp Grassick. This was bad because three girls had escaped from the Girls Industrial School the day before. In view of this, and since she would not talk, the sheriff was called. He soon straightened things out, and then delivered her to Camp Grassick with a strong reprimand.

B. Credits.

Clerk Martin wrote Section VI B and C, and typed the entire report. The rest of the report was written by the manager.

C. Photographs.

All photos (except by Trecker and Dundas) were taken with the refuge camera, and developed and printed in Bismarck.

FLORENCE LAKE NATIONAL WILDLIFE REFUGE

I GENERAL

Good moisture conditions during May, June, and July resulted in above normal precipitation* for the year. However; the dry fall again lowered water levels rapidly, until at freeze-up Florence Lake was 6" below the culvert (the same as 1963).

Because of the poor runoff, the many potholes in G-1 were dry most of the year. Some of them held shallow water for a short time in April and May, but this soon disappeared.

When checked on April 9th, water (6" deep) was flowing from the south into Florence Lake, which was 1" below the bottom of the culvert. The lake was still completely ice covered.

The large west pothole held some water on and off through July, but was dry when checked on May 26th and August 12th. On August 12th the south marsh was nearly dry.

The food supply for upland game, deer, and field feeding ducks was good, while aquatic food production was only fair. Cover conditions were good to excellent for all species.

II WILDLIFE

A. Waterfowl.

The first ducks observed were 18 mallards on April 2nd, and the last record was of a lone mallard on November 17th. The counts made between these dates are recorded in the following table.

Waterfowl Counts

	<u>5/26</u>	<u>7/29</u>	<u>8/28</u>	<u>9/11</u>	<u>9/25</u>	<u>10/13</u>	<u>10/19</u>	<u>10/28</u>
Mallard	98	200	38	130	125	500	125	81
Gadwall	77	75	14	7	6			
A. widgeon	8		25		8			
Pintail	34	50	14	4		30	5	
G.W. teal	2		1			15		
B.W. teal	50	50	23	57	24	4		
Shoveler	34			2				
Total Dabs.	303	375	115	175	188	549	130	81

* No weather data available. Estimate based on observations and discussions with local people.

	<u>5/26</u>	<u>7/29</u>	<u>8/28</u>	<u>9/11</u>	<u>9/25</u>	<u>10/13</u>	<u>10/19</u>	<u>10/28</u>
Redhead	7			1		5		
Canvasback			2			50	15	
Scaup	25			2	20	4		22
Bufflehead						5		3
Ruddy	<u>1</u>		<u>2</u>	<u>53</u>	<u>9</u>	<u>2</u>		
Total Divs.	33		4	56	29	66	15	25
Total ducks	336	375	119	231	217	615	145	106
Coot	-	-	81	114	44	2	-	-

The peak spring count is probably* below average while the fall peak is much below the counts of 1962 (14,000) and 1963 (1,900).

The breeding pair count was made on May 26th, and the brood count on August 7th. The refuge has been divided into six counting units which are located on the map following this section. Unit three is omitted from the following table as it was dry when the count was made.

Breeding Pair Count

	1		2		4		5		6	
	Lone		Lone		Lone		Lone		Lone	
	Prs.	Male	Prs.	Male	Prs.	Male	Prs.	Male	Prs.	Male
Mallard	2	5	7	67	1	-	1	-	1	2
Gadwall	6	2			10	4	10	5	5	4
A. widgeon					1	1	1	1	1	-
Pintail	2	2	6	9						
G.W. teal					1	-				
B.W. teal	3	2			7	4	6	5	2	1
Shoveler	2	6			3	4	3	5	1	1
Total Dabs.	15	17	13	76	25	13	22	17	10	8
Redhead					1	1	1	2		
Canvasback					-					
Ruddy					-	1				
Scaup			5	5	2	2	1	2		
Total Divs.	-	-	5	5	3	4	2	4		
Total Ducks	15	17	18	81	28	17	24	21	10	8

The totals of 95 pairs and 144 lone males compared with the 1963 totals of 153 pairs and 197 lone males. No coots were observed compared to 10 in 1963

* difficult to say because of past records, and the newness of the refuge.

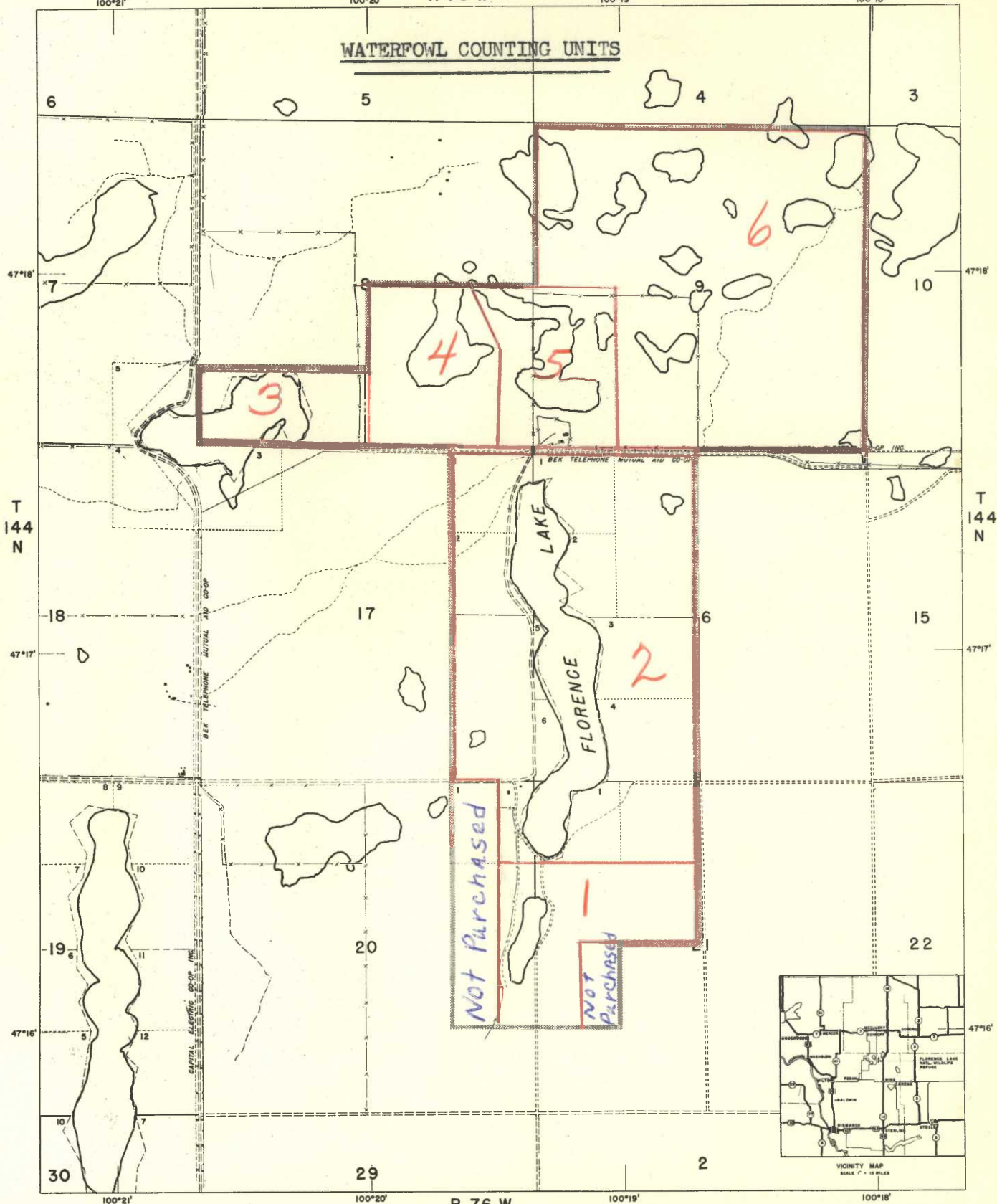
PURCHASE BOUNDARY FLORENCE LAKE NATIONAL WILDLIFE REFUGE

BURLEIGH COUNTY, NORTH DAKOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

R 76 W



COMPILED IN THE BRANCH OF REALTY
FROM AERIAL PHOTOGRAPHS AND OFFICIAL
PLATS OF S.L.M.

WASHINGTON, D.C.

MAY, 1960

SCALE 0 10 20 40 60 80 CHAINS 1 MILE

FIFTH PRINCIPAL MERIDIAN

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

TOWNSHIP
DIAGRAM

TRUE NORTH
MAGNETIC

MEAN
DECLINATION
1959

Broods Observed

	<u>Number Young</u>	<u>Age</u>	<u>Unit Number</u>
Mallard	4	III	2
Gadwall	3	IIc	2
"	5	Ib	4
"	4	Ib	4
"	14	IIa	4
Pintail	4	III	4
B.W. teal	5	Ic	5
"	6	Ib	5
"	4	IIa	5
"	5	III	4
"	4	IIa	4
"	6	III	4
Shoveler	4	IIb	1
Redhead	4	IIa	4
Ruddy	7	Ia	5

There were 15 broods observed with a total of 79 young for an average of 5.27 young per brood. This compares with last years count of 10 broods with an average size of 6.5. No coot broods were observed.

Based on the pair and brood counts, and assuming a minimum of 80 broods were produced, total duck production is estimated at 400. This compares with an estimate of 650 in 1963.

No geese or swans are known to have used the refuge.

B. Upland Game Birds.

Sharp-tailed grouse were seen on several occasions with six being the greatest number. One brood of eight pheasants was observed on August 7th. No gray partridge were seen but are known to be present. Estimated peak numbers are 20, 20, and 15 respectively.

While traveling south from the refuge, the manager had an excellent chance to clock three sharp-tailed grouse for a distance of nearly one mile. They flew straight south at a constant speed of 40 mph, with a SW wind estimated at 8 mph.

C. Other Birds.

On July 29th a female Virginia rail with a brood of seven was located in the south marsh (unit 1). Other bird observations include one black-crowned night heron on May 26th, two American bitterns and one marsh hawk on August 28th, and two pied-billed grebes on October 13th.

D. Big Game Animals.

The white-tailed deer population is on the increase with the peak estimated at 35. It is rare to make a trip through the refuge without seeing several deer. On April 19th, 21 were observed (17 in one herd). The time is fast approaching when serious consideration will have to be given to an open season.

E. Predators.

Red fox, skunk, and raccoon are present in fair numbers. On May 26th a large female raccoon was destroyed.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

The fence post in the southwest corner had to be reset, as it had pulled out of the ground.

All refuge trails were mowed, and two truck loads of gravel were used in patching the main trail.

B. Plantings.

Two Cooperative Farming Agreements were issued for a total of 56 acres of wheat, 7 acres of barley, and 3 acres of corn. In addition, permanent seedings were made by the permittees on land retired from cropping. This amounted to 55 acres to natives, 14 acres to alfalfa, and 5 acres to sweet clover. The sweet clover might have to be re-seeded in later years.

The refuge share of the grain, 7 acres of wheat and 3 acres of corn, was left standing. The wheat was good and would have averaged about 25 bushels per acre. The corn was poor and would have only made about 5 bushels per acre.

This was the last year for farming the unit on the west side of the refuge. The remaining unit was changed in size and shape to permit strip cropping, and to prevent farming through a gully. It now contains 60 acres laid out in 10 and 9 rod strips.

VI RESOURCE MANAGEMENT

Grazing was the only resource which was active, with a permit being issued to Harris Crimmins for a maximum of 225 A.U.M.'s from June 1st to October 31st. This was increased from 180 A.U.M.'s in 1963 because of the light use being made on the 560 acres in the unit. The unit was in excellent condition at the close of the period.

EASEMENT REFUGE DISTRICT # 1

Appert Lake.

When checked on May 28th, the entire refuge had less than one acre of water, which disappeared by the end of June. The area had one pair of pintail, and one pair and one lone male gadwall.

On October 9th three blue goose signs, three penalty marker signs, and three posts were replaced. The area was completely dry.

Canfield Lake.

On April 9th and June 16th the lake contained 5-10 acres of sheet water with no waterfowl present. On September 24th it was completely dry. On that date three blue goose signs, four penalty marker signs, and four posts were replaced.

Flickertail.

The area was inspected on April 14th to get a good look at water conditions. A lot of water was running through the badly eroded east spillway. Concrete is needed to keep the water from cutting a deep trench, which is already about two feet deep. Because of this, the lake contains only about five acres of water when full. A waterfowl count on the 14th showed the following:

Mallards	150	Redhead	80
Gadwall	40	Canvasback	20
A. widgeon	20	Scaup	40
Pintail	50		

A discussion with the landowner indicated that he did not believe the land was still a refuge. He was corrected on this point after the manager checked the deed on April 27th and found that it still is a refuge.

A pair count was made on May 28th with the following results:

	<u>Lone</u>			<u>Lone</u>	
	<u>Pair</u>	<u>Male</u>		<u>Pair</u>	<u>Male</u>
Mallard	2	2	B.W. teal	-	3
Gadwall	4	1	Shoveler	1	1
A. widgeon	3	-	Redhead	4	1
Pintail	3	2			

On that date there were three to four acres of water, and it was no longer spilling.

On October 9th one blue goose sign and one post were replaced. The lake was completely dry.

Hutchinson Lake.

An aerial check was made of the lake on April 23rd. There were only a few acres of sheet water and a few scattered ducks present. According to local people, the lake was dry during most of the summer.

One blue goose sign, one penalty sign, and eleven posts were replaced on September 27th. Some sheet water was present from heavy rains earlier in the month. There were 15 sandhill cranes, and 35 white-fronted geese on the area.

Lake George.

When checked on January 6th, the main lake was completely frozen over, even though it is a large, deep salt lake. Two dead calves were found in the NE $\frac{1}{4}$ of section 35. One had a bullet hole in the head. Landowner Harry Iszler reported seeing 13 deer on 1/4/64, and on 12/26/63 he saw a buck and doe mule deer.

On April 17th the main lake was 98% ice covered, with only five ring-billed gulls. The south lake was 80% ice; and had 34 mallards, 20 redheads, and 14 scaup.

The following broods were observed in the south lake on August 13th.

Mallard	6	Ic	B.W. teal	4	Ia
Gadwall	9	II	Canvasback	5	III
Pintail	3	III	Canvasback	3	IIa
B.W. teal	8	Ib			

In addition, there were about 300 western grebes present.

On September 3rd the entire refuge boundary was checked and reposted with 17 new signs and posts. Two Harlan's hawks were observed on that date.

A waterfowl count on November 6th gave the following results:

<u>South Unit</u>				<u>Main Lake</u>	
Mallard	518	Canvasback	34	Mallard	130
Pintail	14	Scaup	96	Canvasback	60
Redhead	88	Bufflehead	21		
Whistling swan	106				

The area was patrolled during the visit, as that date was the opening of the deer season. While on patrol, Clerk Martin observed 44 deer in the general vicinity of the refuge. There were four buck white-tailed and two doe muledeer taken near the refuge.

The swimming and picnic area on the south side of the main lake again received fairly heavy use. On a good Sunday there would be 150-200 people on the area.

Lost Lake.

One blue goose sign, one penalty marker sign, and two posts were replaced on October 8th. There were nine mallards, five gadwall, three Virginia rails and seven black-necked stilts observed. Some water was running over the spillway.

Springwater.

No waterfowl were present when the area was checked on May 28th. Water was spilling into the drop culvert about $\frac{1}{2}$ " deep around $\frac{2}{3}$ of it.

Four blue goose signs, one penalty marker sign, and one post were replaced on October 9th. Five blue-winged teal, three coot, and one black duck were observed. Water was still spilling into the drop culvert.

Sunburst.

The following ducks were counted on April 14th:

Mallard	45	Redhead	20
Gadwall	15	Canvasback	15
Pintail	40	Scaup	40
G.W. teal	25		

There was no ice on the lake, and the water was about one inch below the spillway.

On May 13th the lake was full, but not spilling. It had spilled a small amount between April 14th and that date. There was a fair sized leak in the face of the spillway. Bird observations include the following.

Mallard	1 male	Sharp-tailed grouse	1
Scaup	1 pair	Black tern	many
Pheasant	5		

By May 28th the lake had dropped about two inches. On that date there were two pairs of mallards, one male pintail, and one male ruddy present.

Three Blue-winged teal broods were observed on August 13th, consisting of 5 (class III0, 7 (class IIc), and 9 young (class IIa). There were also 13 cormorants, one great blue heron, and one male wood duck.

Two blue goose signs, and one penalty marker sign were replaced on October 9th, when the following ducks were present:

Mallard	100	Scaup	8
B.W. teal	37	Ruddy	9

The spillway condition changed very little during the year, due to the small amount of water that passed over and through it. There is a good chance that the first heavy runoff will take the spillway with it.

WATERFOWL PRODUCTION AREAS

I Acquisition Status

Acquisition of these areas remained slow during 1964, with only five tracts acquired. They are:

Name	County	Acres	Name	County	Acres
Delzer (14)	Emmons	68.00	Kirschenmann	Kidder	105.00
Foell (13)*	"	630.27	Nies	McIntosh	69.50
Silvernagel(15)	"	80.00			

The following table shows the number of tracts owned at the end of the year.

County	Number of Tracts	Acres	Number of Mgmt. Units
Burleigh	1	151.70	1
Emmons	6	2,212.57	5
Kidder	5	1,305.00	5
Logan	4	1,133.90	3
McIntosh	16	1,495.80	11
Totals	32	6,298.97	25

In addition we have under management a lease-purchase (Blumhardt (18a) in McIntosh County for 258 acres.

There are eight tracts of Public Domain land which are managed as WPA's. Burleigh County has three totaling 129 acres, Kidder County two totaling 345 acres, and McIntosh County three with a total of 17.8 acres.

* This tract was incorrectly listed in the May-August, 1963 NR. It was approved then, but payment was not made until 1964.

This makes a grand total of 7,048.77 acres in 41 tracts. However, there are only 31 management units.

In contrast to the acquisition program, easements were taken at a rapid rate, especially toward the end of the year. The status of WPA easements at the close of 1964 is listed below. No easements have been taken in Burleigh County.

<u>County</u>	<u>Number of Tracts</u>	<u>Acres</u>
Emmons	4	1,720
Kidder	11	6,864
Logan	6	1,412
McIntosh	25	12,398
Totals	46	22,394

A year earlier there were only five tracts containing 2,666 acres.

II HABITAT

Water conditions were only slightly improved over 1963 in Burleigh, Emmons, Kidder, and Logan Counties. Due to heavy rains (up to 5" in 24 hours) in June, McIntosh County showed a marked improvement. The status of each management unit is shown in the next table. Duck production rating and estimate is included to avoid duplication.

Food and cover conditions for the most part were good to excellent. Some of the more desirable aquatic food plants were not able to produce well due to the water fluctuations.

<u>County</u>	<u>Mgmt. Unit</u>	<u>Water Conditions</u>		<u>Duck Production</u>	
		<u>Spring</u>	<u>Fall</u>	<u>Rating</u>	<u>Est. No.</u>
Burleigh	Uhde	Good	Fair	Good	95
Emmons	Delzer	Good	Fair	Fair	30
"	Foell	Poor	Dry	Poor	70
"	Schiermeister	Good	Good	Fair	30
"	Silvernagel	Dry	Dry	-	-
"	Sisco	Fair	Poor	Poor	35
Kidder	Bechhold	Fair	Poor	Fair	100
"	Bertsch	Good	Good	Fair	55
"	Kirschenmann	Good	Fair	Poor	15
"	Plienness	Good	Good	Fair	60
"	Thacker	Good	Fair	Good	120
Logan	Ammon	Fair	Poor	Poor	25
"	Buchholz	Fair	Poor	Poor	20
"	Larson	Poor	Dry	Poor	20
McIntosh	Bittner	Fair	Poor	Fair	40
"	Bovey	Good	Fair	Good	110
"	Geiszler	Fair	Fair	Fair	35
"	Goehring	Good	Fair	Fair	60
"	Grosz	Good	Fair	Fair	50

<u>County</u>	<u>Mgmt. Unit</u>	<u>Water Conditions</u>		<u>Duck Production</u>	
		<u>Spring</u>	<u>Fall</u>	<u>Rating</u>	<u>Est. No.</u>
McIntosh	Heinrich	Good	Good	Fair	65
"	Jenner	Good	Fair	Good	120
"	Kempf	Good	Fair	Good	95
"	Neu	Excellent	Good	Fair	80
"	Nies	Good	Fair	Good	90
"	Vriesen	Fair	Poor	Poor	35
				Total	1,455

III WILDLIFE

Taking all of the WPA's into consideration the waterfowl, upland game, and deer populations were only fair. Some exceptions are listed below:

<u>Unit</u>	<u>Date</u>	<u>Observations</u>
Bechhold	4/2	4 deer
Plieness	8/3	1,500 ducks
Grosz	8/19	230 ducks
Uhde	9/11	380 ducks (300 mallards), 700 coot
Kempf	10/7	1,000 mallards
Bechhold	10/21	30 pheasants
Schiermeister	11/19	29 sharptails
Ammon	11/27	35 pheasants, 15 partridge, 14 sharp-tails, and much deer sign.

Other bird observations include the sighting of one adult bald eagle flying over the Schiermeister tract on November 19th. This was the only eagle sighted on or near the WPA's.

IV DEVELOPMENT AND MAINTENANCE

Fencing was completed at the Delzer (440 rods) and Fallgatter (840 rods) tracts. Partial fencing was done at the Bechhold (960 rods) and Schiermeister (880 rods) tracts. The fencing was done under a bid at a price of \$.65 per rod. The Government furnished all the material, the bidder furnished all the tools, equipment, transportation, etc.

The Thacker tract fence (east side) was extended six rods further into the water to prevent cattle from going around the end. Forty rods of fence was put up on the west side to keep out sheep. The fencing was done in April by refuge personnel using woven wire.

Posting was completed at the Kempf, Neu, Delzer, and Kirschenmann tracts. Several posts had to be moved at the Grosz tract, as the original survey was off on the east boundary. Some of the older, flimsy typeposts also had to be replaced, as they were twisted and bent.

A new stockwater dugout was dug in the SE portion of the Bechhold tract, and two gully dams were completed at the Schiermeister tract.

Several of the tracts were left in terrible condition by the owners. Piles of junk are scattered all over, and it is hazardous to walk or drive in the area. Two of the worst ones were cleaned up, one (Bechhold) by bid, and the other (Schiermeister) by refuge personnel. The low bidder on the Bechhold job said he never would do it over at the bid price of \$75.00.

The two bids received on the Schiermeister job were high, \$1,000. and \$300., and were therefore rejected. The three man refuge crew spent three days on the clean-up job, and it still is only about 75% complete. Counting all expenses we already have over \$200. in the job. The \$300. bid does not look so high now.

The Schiermeister tract was in unbelievable condition. At least 10 old car bodies were disposed of, and over 50 tires were picked up and burned. Bottles, cans, and all sorts of debris were scattered over several acres. Because of this, most of the work had to be done by hand. If the junk had been in one pile, a "dozer" could have finished the job in a day or less.

V ECONOMIC USE

Two Cooperative Farming Agreements were issued covering 90 acres of flax, 37 acres of wheat, 20 acres of barley, and 3 acres of corn. The barley and corn were left standing for wildlife. In addition the cooperators agreed to seed 228 acres with grass seed furnished by the Government.

A farmer (Oscar Sauer), who lives adjacent to the Bechhold tract, was hired to plant two acres of corn to be left for the upland game birds. He furnished everything for \$7.50 per acre. The corn did not make much feed because of the August frost.

Nine grazing permits were issued for the privilege of grazing cattle on seven WPA's. The grazing season covered a five month period starting May 16th or June 1st, depending on the predominant grasses. A total of 919.15 A.U.M's were utilized, for a cash return of \$1,691.24. All units were checked at least twice and found to be in excellent condition.

VI HUNTING

Hunting pressure is still light, probably because many hunters have not looked closely at the signs, and believe they say "Closed to Hunting". Areas which are known to have received a fair amount of pressure include Bechhold, Uhde, Ammon, Grosz, Delzer and Heinrich.

The hunting pressure picture will change as hunters become aware that the WPA's are open to hunting, and that they usually contain the highest wildlife populations in the surrounding area.

SIGNATURE PAGE

Submitted by:

Marvin Mansfield

Marvin Mansfield

(Signature)

Date: February 17, 1965

Refuge Manager

Title

Approved, Regional Office:

Date:

3-15-65

(Signature)

*Edward J. Smith**Asst.*

Regional Refuge Supervisor

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Slade

MONTHS OF September TO December, 1964

(1) Species	(2) Weeks of reporting period									
	9/6	9/13	9/20	9/27	10/4	10/11	10/18	10/25	11/1	11/8
Swans:										
Whistling				2	3	30	45	30	170	90
Trumpeter										
Geese:										
Canada									15	15
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	400	950	2,250	7,270	750	3,870	1,150	8,480	6,070	4,080
Black	1	2	3	-	2	-	2			
Gadwall	30	20	5	15	5	40	5			
Baldpate	25	20	10	40	-	25				
Pintail	30	60	90	50	10	65	15	70	50	30
Green-winged teal	80	70	50	-	-	5	15			
Blue-winged teal	20	20	10	20	15	10	5			
Cinnamon teal										
Shoveler	10	10	10	10	5					
Wood										
Redhead	20	20	20	20	10	5	1	1		
Ring-necked	5	-	-	-	-	5	-	-	1	
Canvasback	70	-	60	60	25	50				
Scaup	110	110	110	340	775	350	650	420	925	650
Goldeneye								2		
Bufflehead	2	3	3	4	30	110	100	20	75	40
Ruddy	100	90	50	20	60	55	50	10	15	
Other: Hooded Merg.	6	-	-	-	-	-	4			
Coot:	270	240	200	110	90	55	1	-	4	-

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Slade MONTHS OF September TO December, 19 64

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11	12	13	14	15	16	17	18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	1,340								256,270	
Black									70	
Gadwall									840	
Baldpate									840	
Pintail									3,290	
Green-winged teal									1,540	
Blue-winged teal									700	
Cinnamon teal										
Shoveler									315	
Wood										
Redhead									679	
Ring-necked									77	
Canvasback									1,855	
Scaup	270								32,970	
Goldeneye									14	
Bufflehead									2,709	
Ruddy									3,150	
Other									70	
Coot:									6,790	

(over)

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	<u>2,800</u>	<u>170</u>	<u> </u>	Principal feeding areas <u>Northwest and Southeast Sloughs.</u>
Geese	<u>210</u>	<u>15</u>	<u> </u>	<u>and South Marsh for divers. A-4 and A-5 for dabblers.</u>
Ducks	<u>305,389</u>	<u>9,003</u>	<u> </u>	Principal nesting areas <u> </u>
Coots	<u>6,790</u>	<u>270</u>	<u> </u>	
				Reported by <u>Marvin Mansfield, Refuge Manager</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of September to December 1946

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Eared grebe			20	9/2	20	9/2				30
Western grebe			4	10/8	4	10/8				20
Pied-billed grebe			3	10/8	3	10/8				15
Double-crested cormorant			90	9/8	30	9/29				100
Great blue heron			2	9/21	1	10/16				3
II. <u>Shorebirds, Gulls and Terns:</u>										
Terns:										
Sandhill cranes*			16,000	10/5	2,000	11/9				25,000
Killdeer			8	9/10	8	9/10				25
Wilson's snipe			4	10/17	2	10/24				20
Lesser yellowlegs			3	9/21	3	9/21				50
Ring-billed gulls			20	9/21	5	11/4				125
Franklin's gull			160	9/21	7	10/16				500
* Horsehead and Kunkel Lake Areas										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove		100	9/1	4	9/15
White-winged dove					200
IV. <u>Predaceous Birds:</u>					
Golden eagle	1	12/6	1	12/6	1
Duck hawk					
Horned owl	2-4	Present throughout period			5
Magpie	1	9/30	3	10/20	5
Raven					
Crow	2	9/13	15	9/21	25
Bald eagle	1	9/21	1	9/21	1
Red-tailed hawk			2	9/27	5
Marsh hawk			6	9/21	15
Snowy owl	1	11/11	1	11/11	1
Short-eared owl	2	9/27	2	9/27	3
Reported by <u>Marvin Mansfield, Refuge Manager</u>					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752

Form NR-2

(April 1946)

UPLAND GAME BIRDS

1613

Refuge SladeMonths of September to December, 19465

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Cropland 300 acres, grassland & marsh 2,100 acres.	24			50:50				100	
Sharp-tailed grouse	"	60			50:50				40	
Gray partridge	"	80			50:50				30	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Slade

Calendar Year 1964

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
White-tailed deer	Cropland 300 acres, grass- land & marsh 2,100 acres, open water 600 acres.	15	4									40	25	1:4

Remarks:

Reported by Marvin Mansfield, Refuge Manager

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116000

PUBLIC RELATIONS
(See Instructions on Reverse Side)

Refuge SladeCalendar Year 1964

I. Visits

a. Hunting 100 b. Fishing 3,500 c. Miscellaneous 25,500 d. TOTAL VISITS 29,100

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl			
Upland Game			
Big Game	50	2,840	Refuge
Other			

Number of permanent blinds -Man-days of bow hunting included above -

Estimated man-days of hunting on lands adjacent to
refuge 600

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes		
Rivers and Shores (Lake Isabel)		1

1c. Miscellaneous Visits

Recreation 25,000 Official 50Economic Use 50 Industrial -

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	On Refuge		Off Refuge	
	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs			3	129
Bird and Garden Clubs				
Schools	1	20	12	1,382
Service Clubs			1	19
Youth Groups	8	380		
Professional-Scientific				
Religious Groups				
State or Federal Govt.				
Other				

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	1	Radio Presentations	
Newspapers (P.R.'s sent to)		Exhibits	
TV Presentations		Est. Exhibit Viewers	

PLANTINGS
(Marsh - Aquatic - Upland)Refuge SladeYear 1946

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Alfalfa	A-1	10#/A.	2 A.		April	Good		
White Sweet Clover	A-1	10#/A.	8 A.		"	"		
Alfalfa	A-4	10#/A.	10 A.		"	"		
White Sweet Clover	A-4	10#/A.	2 A.		"	"		
Russian wildrye, green needlegrass, switchgrass, alfalfa, western wheatgrass, big bluestem	A-2	10#/A.	15 A.		Nov.	Unknown		
Colorado blue spruce	Headquarters grove		400		April	75%	May drought	
Colorado blue spruce	NW Slough grove		600		April	75%	May drought	

TOTAL ACREAGE PLANTED:

Marsh and aquatic _____
Hedgerows, cover patches 37
Food strips, food patches _____
Forest plantings 1.5

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Wheat	133.5	490			6	36	139.5	Alfalfa	88.4
Barley	9.9	225	25.3	320	18.3	343	53.5		
Oats	31.7	663					31.7		
Corn					19.2	77*	19.2		
								Fallow Ag. Land	

* Yield cut by July 19th hail storm and August 13th frost.

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
- - -	- - -	- - -	- - -	1. Cattle	196	575.67	\$1,059.23	935
				2. Other	1	10.01	18.41	7
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild	- - -	- - -	- - -	2. Acreage Cultivated as Service Operation				- -

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Slade

In Bushels

Months of January thru December 19464

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Barley	250	850	1,100			810	810	290		290	
Corn	20	0	20			20	20	0			
Wheat	0	170	170			90	90	80		80	

(8) Indicate shipping or collection points.....

(9) Grain is stored at Slade Refuge.....

(10) Remarks.....

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lbs., Corn (ear)—70 lbs., Wheat—60 lbs., Barley—50 lbs., Rye—55 lbs., Oats—30 lbs., Soy Beans—60 lbs., Millet—50 lbs., Cowpeas—60 lbs., and Mixed—50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of Columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1759
Form NR-9

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Refuge Slade Year 19465

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
Russian wildrye							35 lbs.	None
Slender wheat grass					400 lbs.	Sully's Hill Game Preserve	110 "	"
Crested wheat grass							60 "	"
Alfalfa							35 "	"
Switchgrass							17 "	"
Sweet clover							80 "	"
Western wheat grass							10 "	"
Green needlegrass							13 "	"
Kentucky blue grass							2 "	"
Mixed grass seed							250 "	"
Tame rye							30 "	"

ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number

Reporting Year

1964

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5/25 - 7/15	Leafy spurge	Six locations scattered around refuge, ranging in size from 25 to 3600 sq. ft. All sprayed twice to catch new plants.	0.3 (0.15 x 2)	2,3,6-Trichloro-Benzoic acid. (Trysben 200)	1.5 gallons	9 lbs./A.	H ₂ O 40 gal/A.	Hand pump

10. Summary of results (continue on reverse side, if necessary)

(a) First years results

- | | |
|--|---|
| 1. Date and amount of first rainfall. | 1. 6/5 .10" |
| 2. Date of first observation. | 2. 6/5 |
| 3. Date of first effects noted. | 3. 6/5 |
| 4. Character of symptoms. | 4. Plant turning brown, leaves curled. |
| 5. Date of exam. & percent of apparent kill. | 5. 6/12 100% |
| 6. Date of followup observ. & percent of regrowth. | 6. 6/17 15% |
| 7. Date of exam. & percent of real kill. | 7. 8/25 95% |
| 8. Cost of chemical, equip., labor: total & per acre cost. | 8. \$13.50, \$6.00, \$48.00 - - Total \$67.50 or \$223.00 per acre. |

Federal Lands Return Funds To Kidder County

A check for \$728.92 was presented to Kidder County officials on December 22 by the U. S. Bureau of Sport Fisheries and Wildlife.

The presentation was made by Clyde Odin, supervisor of the Bureau's Jamestown Area Acquisition Office, Omer Swenson, manager of the Long Lake National Wildlife Refuge and Marvin Mansfield, manager of the Slade National Wildlife Refuge.

This money represent 25% of the net proceeds from sales of products from Bureau lands in this county in Fiscal Year 1964. Of the total amount, \$329.15 comes from Slade Refuge, \$320.64 from Long Lake Refuge and \$79.13 from various land parcels scattered throughout the county. These small parcels were acquired under the wetland acquisition program. Grazing privileges are the main source of revenue.

New Federal legislation approved this fall will mean that additional funds will be due the county in the future. Starting in July, 1965, a payment will be made on the basis of three-fourths of one per cent of the current land value of Bureau owned land or 25 per cent of the net receipts, which ever is greater.

It is estimated that under this new law, Kidder County will receive approximately \$413.00 from Long Lake Refuge and \$459.00 from Slade Refuge. Additional funds will be received from the small wetland areas but because more of these may be purchased, accurate estimate of the return is not possible at this time.

By law the money returned to the county is to be used for the maintenance and operation of roads and schools. The new law seeks to ease the tax problem resulting from Federal ownership.

Steele Ozone - 12/24/64

Site of culverts in new road between Harker Lake and SE Slough.
My dog on point. 10/1/64. Mansfield.

Same as above after construction. 10/22/64. Mansfield.

JAN • 65



Site of new road between Harker Lake and SE Slough. Slade Refuge.
10/1/64. Mansfield.

Same as above after construction. 10/22/64. Mansfield.

JAN • 65



JAN • 65



Site of new road between Harker Lake and SE Slough. Slade
Refuge. 10/1/64. Mansfield.

Same as above after construction. 10/22/64. Mansfield.

JAN • 65



Hail storm at headquarters. Slade Refuge. 7/19/64. Mansfield.

Road under construction east side of Harker Lake. Slade Refuge.
10/22/64. Mansfield.

OCT • 64



New addition to house. Slade Refuge. 7/8/64. Mansfield.

Office and shop. Slade Refuge. 12/25/64. Mansfield.

JAN • 65



Snow conditions about March, 1950. Slade Refuge residence.
Photographer unknown, probably L. Dundas.

Same as above. 12/25/64. Mansfield.

• JAN • 65 IAI



Snow conditions about March, 1950. Slade Refuge barn. Photographer unknown, probably L. Dundas.

Same as above. 12/25/64. Mansfield.

• JAN • 65 IAI



Corn strip in A-4 to be left for wildlife. Brome strip on left and barley field on the right. Looking south. Slade Refuge. 7/8/64. Mansfield.

Rudolph Mittleider finishing work on new cesspool. Old drain field plugged up. Slade Refuge. 6/12/64. Mansfield.

JAN • 65



JAN • 65



New dugout in G-3 at Slade Refuge. Note fence. 7/8/64. Mansfield.

Same as above with close-up of drinking area and fence. 7/8/64.
Mansfield.

JAN • 65



JAN • 65



Recreation use at Lake Isabel. 7/16/64. Trecker.

Tappen Biology Class on Slade Refuge tour. 4/29/64. Mansfield.



JAN • 65



Damaged gate at entrance to Recreation Area. 12/14/64. Mansfield.

Same as above.



Completed west dam at Bechhold WPA before filling. 9/20/63.
Mansfield.

Same as above nearly filled. 4/28/64. Mansfield.

JAN • 65



JAN • 65



Looking upstream from top of west dam before filling. Bechhold
WPA. 9/20/63. Mansfield.

Same as above nearly filled. 4/28/64. Mansfield.

JAN • 65



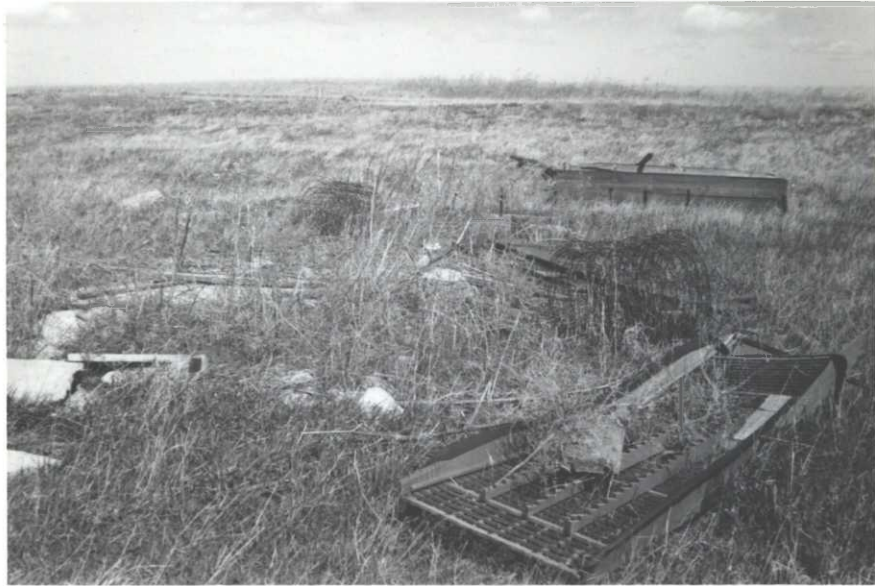
JAN • 65



Junk at old homesite. Bechhold WPA. 4/28/64. Mansfield.

Looking east toward west dam. Bechhold WPA. 4/28/64. Mansfield.

JAN • 65



JAN • 65



Old basement (house). Bechhold WPA. 4/28/64. Mansfield.

Junk piles at Schiermeister WPA before cleanup. 11/18/64.
Mansfield.

JAN • 65



JAN • 65



Junk clean-up at Schiermeister WPA. MM Schauer in foreground,
Clerk Martin at truck. Smoke is from burning trash. 11/18/64.
Mansfield.

• JAN • 65

